

HEALTH EDUCATION NEEDS FOR PREGNANCY: A STUDY AMONG WOMEN ATTENDING PRIMARY HEALTH CENTERS

Parveen Rasheed, MD, Latifa S. Al-Sowielem, FFCM

Department of Family and Community Medicine, College of Medicine, King Faisal University, Dammam, Saudi Arabia

هدف الدراسة: إيجاد مستوى إدراك بالنسبة للحمل ومصدر المعلومات بين النساء الولادات اللاتي يزرن المستوصفات الصحية في الخبر .

طريقة الدراسة: علمت دراسة مقطعية في ثلاثة مراكز للرعاية الصحية الأولية في الخبر خلال فترة اسبوعين في أبريل 2001م وقد تمت مقابلة 581 امرأة ولودة من المؤهلات للدراسة بمساعدة الاستبيان.

نتائج الدراسة: تم ابلاغ نسبة كبيرة من النساء عن بعض المسائل الصحية للحمل مثل : استهلاك المواد الغذائية الضرورية كمنتجات الحليب (74و7%) ، الغذاء الغني بالبروتين (71و4%) والفواكهة (68و2%)، عدد ساعات الراحة اليومية الضرورية (81و9%) ، والحاجة للتمرينات (68و3%) ، وأهمية وتوقيت الزيارات في فترة الحمل وخطورة التدخين في الحمل (99و3%) ، والمباعدة الملائمة بين الأطفال (97و7%) . ومع ذلك كثير من النساء لديهن نقص في المعرفة عن أهمية إستهلاك المواد الغذائية المحتوية على الألياف (55و1%) لتجنب الإمساك والتغيرات المطلوبة في الغذاء خلال الفترة المبكرة من الحمل لتجنب العثيان والتقيئ ، والأمراض التي يتأثر بها الجنين بسبب تدخين الأم ، العدوي بالحصبة الألمانية ونقص السن بالأم. ولم يكن يعلم بأهمية الإجراءات أثناء الحمل ، مثل فحص الدم والعناية بالنثدي أثناء الحمل والتلقيح لمنع مرض التيتانوس والحصبة الألمانية . وكان مستوى التعليم العالي مرتبطاً بعلاقة متبادلة هامة مع المعرفة الأفضل لبعض المسائل الصحية. وقد مثل الأطباء والمرضات مصدراً ضعيفاً للمعرفة الصحية (35و6%).

التوصيات: هناك حاجة ماسة لتطوير برامج التثقيف الصحي المرتبطة بالحمل من خلال المراكز الصحية الأولية ووسائل الإعلام المختلفة لتحسين مستوى المعرفة لدى النساء عامة والحوامل خاصة وذلك للإقلال من المشاكل الصحية المرتبطة بالحمل.

الكلمات المرجعية: التثقيف الصحي، الحمل، المعلومات الصحية.

Objective: To find out the level of health awareness related to pregnancy and the sources of information among parous women visiting the Primary Health Centers in Al- Khobar.

Methods: This is a cross-sectional study conducted at three Primary Health Centers in Al-Khobar during a two-week period in April 2001. Five hundred and eighty one parous women who were eligible for the study were interviewed with the help of a questionnaire.

Correspondence to:

Dr. Parveen Rasheed, Department of Family & Community Medicine, College of Medicine, King Faisal University, P.O. Box 2114, Dammam 31451, Saudi Arabia

Results: A large proportion of the women were well informed about certain health issues of pregnancy such as dietary intake of essential foods like dairy products (74.7%), Protein-rich foods (71.4%) and fruits (68.2%), the hours of daily rest necessary (81.9%), the need for exercise (83.6%), the importance and timing of antenatal visits, the risk of smoking in pregnancy (99.3%) and proper spacing of babies (97.7%). However, many women had no knowledge of the importance of taking high-fiber foods (55.1%) to avoid constipation, the required dietary changes in early pregnancy to prevent nausea and vomiting, and the ill-effects of maternal smoking on the fetus, Rubella infection and advancing maternal age on the fetus. They were also not aware of the importance of the various antenatal procedures such as blood examination, breast-care during pregnancy and immunizations to prevent Tetanus and Rubella infection. A higher literacy level of the women was significantly correlated with better knowledge on certain health parameters. Physicians and nurses constituted poor sources of health information (35.6%).

Conclusion: There is a need to restructure the Health Education programmes relating to pregnancy delivered through PHCs and the mass media for better knowledge among women of childbearing age can decrease pregnancy-related problems and improve perinatal outcome.

Key Words: Health education, Pregnancy, health knowledge.

INTRODUCTION

Health Education, one of the essential elements in the delivery of Primary Health Care as dictated by the Alma Ata conference (1978) is expected to be conducted from the Primary Health Centers (PHCs) of the Kingdom in an effective manner. The national "Plan of Action" for activities of the PHCs, which is revised annually emphasizes that health information on antenatal care and related matters must be properly disseminated so that women can improve their knowledge, attitude and skills for a healthy pregnancy and delivery. Health Education on this subject is also promoted through the mass media, including the national TV and a wide range of informative literature distributed. In other countries too,^{1,2,4} efforts are made by the health-care providers to ensure that there is adequate health awareness among pregnant women. However, several studies have shown that many women either lack knowledge¹⁻⁴ or show a lack of concern for certain health

risks in pregnancy.^{1,2} This indicates that there is the need for a more effective drive to educate women and help them to acquire appropriate knowledge and develop attitudes towards a healthy pregnancy. Though the primary health care programme and health education strategies have been implemented for more than two decades now in Saudi Arabia, little is known about the information women need on pregnancy and the extent to which they have benefited from the knowledge they have acquired through these channels of communication. The current study was, therefore, conducted on parous women who used the PHC facilities in Al-Khobar to find out their level of awareness of health matters relating to pregnancy and their sources of information.

METHODOLOGY

A cross-sectional study was conducted on women who visited three randomly selected PHCs in Al-Khobar during a two-week period in April 2001 from 8.30 am to 12

noon. Because of unavoidable logistic limitations, it was not possible to carry out the study in the afternoon sessions. Consequently, the data may not be as diverse as one may have wished. All married women who were of child-bearing age (15-45 years) and had been through at least one pregnancy were selected for the study. It was assumed that parous women should have had adequate exposure to health information on pregnancy. Any deficiencies in their knowledge would perhaps be a reflection of the inadequacies of the education provided through the PHC and the mass media.

Five hundred and eighty-one women were eligible for the study. They were asked questions on issues relating to health in pregnancy by means of a specially designed questionnaire. The information was elicited by trained interviewers. Information was sought on (a) their demographic profile and parity status, (b) the recommended dietary pattern in pregnancy, that is, foods that would promote the health of mother and baby, and those that should be avoided in the first trimester of gestation to avoid nausea and vomiting and those that help to avoid constipation; (c) the number of hours of rest advisable during the day and at night; (d) the necessity and type of exercise encouraged in pregnancy; (e) the safe maternal age for a healthy fetal outcome and (f) the harmful effects of cigarettes/shisha smoking or the diseases like Rubella in pregnancy. The women were asked about their awareness of the importance of antenatal check-ups, the suggested frequency and timing of antenatal visits, the significance of routine laboratory tests, the immunizations recommended and the breast-care practices in pregnancy for successful breastfeeding. The women's opinion was also sought on the ideal spacing of pregnancies. Finally, they were also

asked the source(s) of their health information.

Data were analyzed using the SPSS package programme. Distributions and bivariate analyses of data were done. The chi-square test of significance was used where appropriate. A p-value of less than 0.05 was considered significant.

RESULTS

Out of the 581 parous women recruited for the study, 435 (75%) were Saudis within the age range of 15-45 years (Mean 31.4; SD 6.84). Most were in the 21-30 years (42%) and 31-40 years (41.2%) age groups. The women were grouped into three categories according to their literacy status as follows; 125 (21.5%) were either illiterate or had no schooling, 217 (37.3%) had reached primary or intermediate level and 239 (41.1%) had completed high school or had college education.

Food in pregnancy

A survey on the food items necessary for maternal health and fetal growth showed that while a large proportion of women (71.4%) mentioned meat/fish/eggs, 74.7% dairy products and 68.2% fruits, fewer women (44.9%) named such essential foods as vegetables, 52.5% green leafy vegetables and 16.3% complex carbohydrates. Though more women who were Para >3 (77.1%) obtained a high knowledge score of 3-6 on this topic compared to those who were Para 1 (68%), the results were insignificant ($p=0.1$). Information on food patterns that are generally considered able to control or reduce nausea and vomiting of early pregnancy was sought. Nearly one-third of the women (31.3%) reported that they were not aware of them, others advocated small frequent meals (12.2%), a decreased intake of certain food items including oil-rich foods (38.5%), tea/coffee (17.5%) and spicy foods (17.1%). A large group of women

(44.8%) believed that avoidance of sugar/sugary foodstuffs including chocolate, meat/fish/eggs, carbohydrate-rich foods like rice/pasta, milk, soft drinks and sour or very salty food items would help to prevent nausea and vomiting in pregnancy. Parity did not influence the knowledge score for the recommended changes in food intake during early pregnancy. Responses to the question on the dietary requirements for the prevention of constipation showed that a large number of women (54.7%) were not aware of the importance of high fiber foods such as vegetables and fruits and whole grain products (82.1%) nor the requirement of an increased fluid intake (46.5%).

Rest in pregnancy

The women were asked about the amount of daily rest necessary in pregnancy. A majority of the respondents (81.9%) rightly thought that 7-8 hours of night rest was adequate. An afternoon rest period of 2-3 hours was suggested by 57.1% women while 16% of the women believed that one hour or less was enough.

Exercise in pregnancy

Ninety-five women (16.4%) were not in favor of any exercise during pregnancy and 53 (9.1%) had no knowledge of its importance. A large proportion of those who advocated exercise considered walking (64.4%) as the best form of physical activity. Few women (13.6%) suggested swimming/aerobics/jogging or "special antenatal exercises".

Breast care in pregnancy

Out of 581 women, 288 (49.5%) were not aware of the importance of regular cleaning of the nipples, 553 (95.2%) did not know about the application of skin softeners and 470 (80.9%) about manual expression of fluid from the breast during the last trimester of pregnancy. Only 5 (0.86%)

women suggested that it was important to wear a good supportive undergarment.

Rubella in pregnancy

A large proportion of women (57%) reported that they lacked information about the adverse effects of Rubella infection in pregnancy. Fetal congenital anomalies (31.5%) and abortion (12.6%) were the two most common conditions cited by those who were aware of the effects of Rubella. Table 1 shows that the literacy level of the women significantly influenced their awareness of the consequences of maternal Rubella ($p < 0.01$).

Smoking and pregnancy

A vast majority of the women (99.3%) responded affirmatively to the possible harmful influence of smoking during pregnancy. While fetal congenital malformation (24.3%), decreased fetal growth (11.4%) and abortion/premature delivery (5.3%) were mentioned, half of the women (50.6%) mentioned the general effects of smoking on health such as, cancer or a discomfort of the respiratory tract by the occurrence of "suffocation, dyspnoea, hypoxia and asthma." Literacy level did not have a significant effect on the women's knowledge of the possible risks of congenital malformation, decreased fetal growth or abortion/premature delivery as a consequence of maternal smoking ($p > 0.05$).

Safe maternal age for pregnancy

Out of 581 women, 15 (2.6%) did not respond to the question on the safe maternal age (upper limit) for a healthy outcome of pregnancy. Thirty-eight percent of the women felt that both the mother and the fetus were safe if the pregnancy occurred up to the age of 39 years, while 44.5% women believed it would be safe up to 45 years. A few women (9.8%) saw no risk to pregnancy even after the age of 45 years.

Table 1: Distribution of women by literacy level and knowledge of the adverse consequences of rubella infection in pregnancy (n=581)

Knowledge status	Literacy Level			p-value
	Illiterate or Non-schooled (n=125)	Primary or Intermediate (n=217)	High school or College (n=239)	
	No. (%)	No. (%)	No. (%)	
No knowledge	88 (70.4)	131 (60.4)	113 (47.3)	<0.01*
Knowledgeable	37 (29.6)	86 (39.6)	126 (52.7)	<0.01*
Abortion	12 (9.6)	26 (12.0)	35 (14.6)	
CM	25 (20.0)	60 (27.6)	98 (41.0)	

CM=Congenital malformation *statistically significant

Table 2: Distribution of mothers by literacy level and knowledge of the safe upper limit of maternal age for a healthy pregnancy outcome (n=581)

Literacy Level	A		B	
	<30 years No. (%)	30-39 years No. (%)	40-45 years No. (%)	46 years No. (%)
Illiterate or Non-schooled (n=125)	7 (5.8)	29 (24.2)	63 (52.5)	21 (16.8)
Primary of Intermediate (n=217)	16 (7.5)	88 (41.3)	91 (42.7)	18 (8.3)
High School of College (n=239)	21 (9.0)	98 (42.1)	98 (42.1)	16 (6.7)

No response =15, A vs B p<0.01

Table 3: Distribution of women by literacy level and knowledge about reasons for blood examination in pregnancy (n=581)

Knowledge status	Literacy Level			p-value
	Illiterate or Non-schooled (n=125)	Primary or Intermediate (n=217)	High school or College (n=239)	
	No. (%)	No. (%)	No. (%)	
No knowledge	24 (19.2)	32 (14.7)	18 (7.5)	<0.01*
Knowledgeable	101 (80.8)	185 (85.3)	221 (92.5)	<0.01*
Anemia	65 (52.0)	110 (50.7)	164 (68.6)	<0.01*
Blood group	9 (7.2)	15 (6.9)	44 (18.4)	<0.01*

*Statistically significant

Table 2 shows that knowledge of the adverse effects of advancing maternal age on pregnancy (>40 years) increased significantly with rising literacy level (p<0.01).

Spacing between pregnancies

The mothers were questioned on the ideal spacing between pregnancies. A large proportion of them (59.5%) preferred two-year intervals between births while some of them (38.2%) stated three years or more. Very few women (2.3%) did not believe in spacing of pregnancies.

Antenatal care

a. Importance of antenatal care: The vast majority (97.2%) of women had understood the importance of antenatal care. Nearly two-thirds of them (63.2%) believed that it was necessary for the monitoring of fetal growth. Other responses included “to have a safe pregnancy and delivery” (40.4%) and “to detect maternal and fetal complications” (36.3%).

b. Antenatal visits: Out of 581 women, 534 (91.9%) were aware that the first visit for

antenatal care should be in the first trimester of pregnancy. A large proportion of the women (78.2%) believed that more than 8 antenatal visits were required during the entire period of pregnancy.

c. Importance of blood examination:

Seventy-four women (12.7%) were not aware of the reasons for blood examination in pregnancy with significant differences observed among the different literacy levels of the women as expected ($p < 0.01$) (Table 3). Among those who were knowledgeable, the most common reasons mentioned for blood examination were to diagnose Anemia (58.3%) and Diabetes (51.6%). Few women mentioned Blood Groups (11.7%) and diseases such as Hepatitis B (4.3%) and Syphilis (1%) as reasons for the Blood test. Literacy played a significant role in the responses given by the women for the detection of anemia ($p < 0.01$) and blood groups ($p < 0.01$) (Table 3).

Table 4: Distribution of women by parity and knowledge of immunization by tetanus toxoid in pregnancy

Parity	Know-ledgeable* No. (%)	No knowledge* No. (%)	Total
Para 1	28 (37.3)	47 (62.7)	75
Para >1	231 (45.7)	275 (54.3)	506
Total	259	322	581

* $p = 0.17$ (not statistically significant)

d) Immunization in pregnancy: More than half of the women (53.7%) were not aware of the immunizations recommended during or prior to pregnancy. Of those who knew, 44.6% rightly mentioned protection against tetanus as one of the reasons for immunization. Parity level did not exert a significant influence on their knowledge of the tetanus vaccine ($p = 0.17$). None of them mentioned protection from rubella by immunization before pregnancy (Table 4).

Sources of health information

The most common sources reported by the women for health information in pregnancy included doctors/nurses (35.6%), relatives/friends (36.1%), books/magazines (35.3%), their mothers (25.1%) and TV/Video programmes (20.7%).

DISCUSSION

The data indicate that many women were well informed about certain aspects of pregnancy such as the necessary dietary requirements, the need of adequate daily rest and exercise, timing of the antenatal visits, the importance of not smoking during pregnancy and the proper spacing of babies. However, the large gaps in other areas of knowledge is a cause of concern, considering that all the women in the study population had had at least one previous pregnancy, were PHC users and should have been exposed to or had the curiosity to explore health matters relating to pregnancy.

Many women were ill-informed about the importance of eating vegetables and other high fiber foods to prevent constipation, a condition commonly observed in pregnancy; nor was there much mention of green leafy vegetables which are a good source of Folic acid. Moreover, a large proportion of the women were not aware that avoiding certain types of foods and following acceptable dietary regimes minimized nausea and vomiting of early pregnancy. Eiser and Eiser¹ reported in their study on young primiparas in the UK that many women were also not aware of the dietary changes required in pregnancy.

Though a large proportion of the women (74.5%) in the present study were in favor of exercise in pregnancy, most of them (64.4%) suggested walking only. There was no specific mention of breathing and relaxation exercises which are recommended during this period. Swimming which is an acceptable physical

activity in pregnancy was also not commonly reported, as it is not a popular exercise, in general, for women in this part of the world.

With the numerous campaigns in this region against smoking, the vast majority of women were generally aware that smoking was harmful to health. However, more than half of them did not know its specific ill-effects on the mother and the fetus. In the UK, though young primiparas were aware of the harmful effects of smoking in pregnancy, there was a general lack of concern for the risks of smoking and its effects on their own pregnancy.¹ Similar observations were made among female health professionals in the USA.² In their study on low-income pregnant women in Louisiana (USA) Arnold et al³ reported that knowledge about the health effects of smoking in pregnancy varied significantly according to levels of literacy. This is contrary to our findings, possibly because of the lack of literature for the public or health education on maternal smoking in this region.

More than half of the study population were unaware of the consequences of Rubella infection during pregnancy. This is in line with the findings of a study in Australia⁴ where, the importance of immunity to Rubella and the effects of Rubella infection in pregnancy could not be identified by 41% of the pregnant women at their first antenatal visit despite having had pre-pregnancy counseling sessions. While one-third of the women in our study cited congenital malformation, a health risk to the fetus as a consequence of maternal Rubella, young primiparas in the UK specifically indicated damage to limb development suggesting to the authors that there was general confusion in this group between the effects of Rubella and the drug Thalidomide.¹ Our findings support the need to create an awareness among women on

primary prevention strategies for birth defects in general and Rubella infection in particular.

Advancing maternal age beyond the age of 35 years can adversely affect the outcome of pregnancy with an increased risk of having a child with Down's syndrome among other things. More than half of the women in the present study (54.3%) were not aware of this. Though, in general, as the literacy level of the women rose, there was a significant positive improvement in knowledge ($p < 0.01$), a substantial proportion of the high school/college educated women (51%) remained unaware of the safe age for pregnancy, indicating a lack of discussion of this subject at the health center or in the mass media.

It was encouraging to note that a vast majority of women (97.4%) had understood the importance of antenatal visits and cited appropriate reasons for their check-up. They believed in antenatal care early in pregnancy and regular follow-ups as recommended. Their response, however, should not be taken as a reflection of women in the general community since those in the study group were urban women attending the PHCs. A Maternal and Child Health Community Survey (1991) conducted in different regions of Saudi Arabia showed that though utilization of antenatal care services was high (86%), almost one-third of the non-attenders (30%) believed that they did not need it.⁵ A notable point observed in the present study was that though the subjects were PHC users, many of them lacked information on the importance of antenatal procedures such as blood examination, immunization with Tetanus Toxoid and breast care during pregnancy. A decreasing literacy level was found to be a significant factor in the lack of awareness of these health practices ($p < 0.01$). Moreover, physicians and nurses constituted poor sources of health

information (35.6%) for these mothers. Research data from another region of Saudi Arabia has also shown that pregnant women did not perceive the medical staff as a significant channel of health information.⁶ One wonders if this is indicative of the PHC health workers' inability to fulfill their function of educating the patients on health matters. It may also be that the language barrier between the largely non-Arab staff and the local population inhibits effective communication.

The results of this investigation underlines the need to intensively reactivate the health education programmes through the local PHCs as well as the mass media. It seems that the current programmes are inadequate and need to be revamped. In health centers where the medical staff is largely non-Arabic speaking, it is vital that health-educators/medical staff be drawn from the local region or that staff who are fluent in Arabic be assigned for this purpose. Educational interventional research studies^{7,8} conducted during the antenatal period have been highly effective in improving the knowledge and health habits of pregnant women. Creating awareness among the local women of childbearing age about the prevention of health problems in pregnancy, healthy practices during the gestational period, and the importance of the

various procedures in antenatal care, will increase their satisfaction, improve perinatal outcome and ultimately reduce the burden of pregnancy-related preventable problems on the health services.

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